

24 April 1962

MEMORANDUM FOR: Chief, Technical Plans & Development Staff
THROUGH: Acting Chief, Technical Development Branch
SUBJECT: [] Image Correlator

1. The correlator was inspected by myself and [] and I spent a further two days working with the machine. It is an extremely fine piece of equipment, and whilst the controls are not perfect in human engineering concepts, they are functional and accurate.
2. It is, however, very apparent to me that optimum efficiency in operational use will only be achieved by continuous operator use and knowledge of what the correlation indicators mean. The correlation is achieved by alignment in pairs, using the same master throughout a series of eight correlations. It is indicative of the machine's performance that, whilst the optical alignment as indicated on the screen looked perfect, in all the tests I carried out the electronic alignment always indicated a slight mis-match which had to be corrected. There is probably a [] improvement factor in the electronic indication versus optical indication in terms of accuracy and alignment.
3. I discussed operational evaluation with [] and have asked them to propose an evaluation program. I am sure [] are best suited to do this as they are thoroughly familiar with the machine. Such work would indicate results that could be expected from a wide range of inputs and would result in a full operator manual showing not only mechanical operation but also operational possibilities and limits.
4. Inputs for such a program would consist of:
 - a. Ground pictures which we would supply, taken under many varying conditions and with different films and cameras.
 - b. Aerial pictures utilizing the []
[]
[]
be operational in June/July.

9 April 1962

MEMORANDUM FOR: Chief, Technical Plans & Development Staff

SUBJECT: Staff Study, "Image Enhancement in the Photographic and Photo Interpretation Field"

1. Problem

Image Enhancement is a term now in common use in the photographic interpretation field. However, it has several connotations and the object of this study is to: (a) define the term; and (b) set out a plan for optimum utilization of the techniques available.

2. Facts

a. It is a fact that aerial photography can be made to reveal more information than is perceptible when only standard processing is applied to produce a positive rendition of the negative image.

b. It is a fact that processes other than standard processing which can be applied to make more information available are time-consuming and can not be considered applicable to all recorded images in the way that standard processing is applied. This makes Image Enhancement a highly selective technique which has to be carefully considered by the PI and the enhancement technician in terms of necessity and potential.

c. It is also a fact that no one technique within the enhancement process is a complete answer to any problem which the PI may present. To fully exploit the photography, one, or perhaps all, of the available techniques may be required. This means that the enhancement technician must be fully aware of the photographic conditions and the capability of his enhancing equipment.

3. Definition

The presented facts define the technique which can, therefore, be stated as follows:

Image Enhancement is a general term given to the various techniques which can be applied to photographic imagery on a highly selective basis in order to further reveal information concerning the image, which information is not readily perceptible as a result of standard photographic processing.